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a magnetic layer formed on said exchange layer structure,

said exchange layer structure including:

a ferromagnetic layer; and

a non-magnetic coupling layer provided on said ferromagnetic

layer and under said magnetic layer,

said ferromagnetic layer and said magnetic layer having antiparallel magnetizations.

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2. (Once Amended) The magnetic recording medium as claimed in claim 1, wherein said ferromagnetic layer is made of a material selected from a group consisting of Co, Ni, Fe, Ni alloys, Fe alloys, and Co alloys which include CoCrTa, CoCrPt, and CoCrPt-M, where M = B, Mo, Nb, Ta, W or alloys thereof.

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4. (Once Amended) The magnetic recording medium as claimed in claim 1, wherein said non-magnetic coupling layer is made of a material selected from a group consisting of Ru, Rh, Ir, Ru alloys, Rh alloys, and Ir alloys.

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6. (Once Amended) The magnetic recording medium as claimed in claim 1, wherein said magnetic layer is made of a material selected from a group consisting of Co, and Co alloys which include CoCrTa, CoCrPt and CoCrPt-M, wherein M = B, Mo, Nb, Ta, W or alloys thereof.

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8. (Once Amended) The magnetic recording medium claimed in claim 7, which further comprises:

a non-magnetic intermediate layer interposed between said underlayer and said exchange layer structure,

said non-magnetic intermediate layer having a hcp structure alloy selected from a group consisting of CrCr-M, where M = B, Mo, Nb, Ta, W or alloys thereof, and having a thickness in a range of 1 to 5 nm.

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10. (Once Amended) The magnetic recording medium as claimed in claim 7, wherein said underlayer is made of a B2 structure alloy selected from a group consisting of NiA1 and FeA1.

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19. (New Claim) The magnetic recording medium as claimed in claim 1, which is adapted for longitudinal magnetic recording.

20. (New Claim) A magnetic recording medium adapted for longitudinal magnetic recording, comprising:

at least one exchange layer structure; and

a magnetic layer formed on said exchange layer structure, said exchange layer structure including:

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a ferromagnetic layer having a thickness in a range of 2 to 10 nm;

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a non-magnetic coupling layer provided on said ferromagnetic

layer and under said magnetic layer,

said ferromagnetic layer and said magnetic layer having antiparallel

magnetizations.

21. (New Claim) The magnetic recording medium as claimed in claim 20,

wherein said non-magnetic coupling layer has a thickness in a range of 0.4 to 0.9 nm.

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22. (New Claim) A magnetic recording medium adapted for longitudinal
magnetic recording, comprising:

at least one exchange layer structure; and

a magnetic layer formed on said exchange layer structure, said exchange

layer structure including:

a ferromagnetic layer; and

a non-magnetic coupling layer, having a thickness in a range of
0.4 to 0.9 nm, provided on said ferromagnetic layer and under said magnetic layer,

said ferromagnetic layer and said magnetic layer having antiparallel
magnetizations.